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EXAMINER	
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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/775,633	BURAK, KEVIN	
	Examiner	Art Unit	
	ANDREW LAI	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *14 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Examiner's Forewords

In responding to previous Office Action of 7/12/2007, Applicant presented remarks/arguments with essentially no amendment to the claims (except claim 1 last line wherein the words "should be" were changed to "are", which basically provides no concrete changes to the claim). Applicant's remarks are fully considered and responses thereto are presented in Section 7, "Response to Arguments".

After said full and careful consideration of Applicant's remarks/arguments, Examiner concludes to maintain the position of the previous Office Action. Therefore, the following sections (1 through 6) of art rejection are essentially the same as those of the previous Office Action except a few non-substantial word changes/corrections.

Applicant is therefore especially referred to the "Response to Arguments" section for Examiner's reasons of maintaining said position.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1, 2, 3**, 4 – 7 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Okada (US 2002/0018442).

Okada discloses "a LAN path control system capable of easily changing active port of terminals" (Abstract lines 1-3) comprising the following features:

With respect to independent claims 1, 2 and 3

Examiner's note: Okada's system (fig. 3) has a plurality of terminals (fig. 3 items 301-312) each having "a main controller and two LAN controllers which have LAN communication ports (not shown) respectively" ([0050] lines 1-3 and also shown in fig. 3, e.g., "terminal 301" having "main cont. 321" and "LAN cont.0 322" and "LAN cont.1 323"). It is important to note that Okada's teachings on "LAN controllers" are equivalent to "communication ports" since each LAN controller is directly coupled to a respective communication port as said hereinabove. For example, [0055] lines 6-8 recite "First and second MAC address areas are for registering the specific MAC addresses assigned to the LAN controllers 322 and 323 respectively". It should be understood as specific MAC addresses assigned to the communication ports each LAN controller has, respectively. For another example, [0051] recites "*each of the LAN controllers is assigned with a specific media access control (MAC) address*". It should be understood as each associated port being assigned a MAC address.

With above background information, below is a discussion of said claims for which Okada's invention comprises:

Regarding claim 1, *an industrial network redundancy system* (see "a local area network path controlling system" recited [0013] line 2) *for providing communication redundancy between industrial network nodes* (see "which is capable of easy changing an active port of a terminal" recited [0013 lines 2-3) *comprising:*

at least two industrial network nodes (refer to fig. 3 and see "each of the terminals 301-312" recited [0050] line 1), *each having a plurality of network ports* (see "a terminal which is used in a local area network and capable of easy changing from an active port to a standby port thereof" recited [0014] lines 1-4) *to a switched network* (fig. 3 see the middle section for "0 transmission line" in block 361 and "1 transmission line"

in block 362, each having various "HUB", and see "plurality of hubs forming a simplex basic local area network" recited [0017] line 4);

a plurality of communication paths (fig. 3 depicting a plurality of paths between, e.g. terminal 301 and terminal 307 and see "it is therefore an object of this invention to provide a local area network path controlling system" recited [0013] lines 1-2) *between respective network ports of the at least two industrial nodes* (fig. 3 depicting two ports each terminal 301-312 and each port having its respective path, and fig. 4 showing detailed structure of a terminal having "LAN. CONT.0 [LAN controller 0] 322" associated with a port and "LAN.CONT.1 323" with another port), *wherein the plurality of communication paths comprises the switched network* (fig. 3 noting that said paths connecting to said "HUBs" in "0/1 transmission line" blocks "forming a simplex basic local area network" recited [0017] line 4); *and*

a respective data link protocol layer residing on each of the at least two industrial network nodes (see "each of the terminals has first and second local area network controllers and assigned with specific internet protocol address" recited [0017] lines 5-7) *for determining which of the plurality of communication paths to utilize for outgoing communications* (***1:*** refer to fig. 4 showing a "CPU 401" and see "CPU401 to control the whole of the terminal 301. The [a] program makes the CPU 401 serve as an equipment illustrated in fig. 7" recited [0057] lines 2-4. ***2:*** refer to fig. 7 and see "A first failure detecting portion 704 detects a link failure between the active controller 322 and the hub connected to the active controller. A changing porting 705 changes the active controller from the LAN controller 322 to the LAN controller 323" recited [0058] lines 14-19) *and*

for determining to which port of the other of the at least two industrial network nodes such communications are addressed (see "when the CPU 401 receives the normal reply, it abstracts the source IP address and the source MAC address from the received normal reply" recited [0070] lines 1-3 and "Thus the terminal 301 has the specific IP addresses and the MAC addresses of the other terminals which are put in operation in the destination information table 412. The terminal 301 can communicate with the other terminals by the use of the specific IP addresses and the MAC addresses registered in the destination information table 412" recited [0071] lines 1-3. Also refer to fig. 4 to see said "destination information table 412" as well as an "own terminal information table 413").

Regarding claim 2, *an industrial network redundancy system* (see "a local area network path controlling system" recited [0013] line 2) *for providing communication redundancy* (see "which is capable of easy changing an active port of a terminal" recited [0013 lines 2-3) *between a first industrial network node* (see fig. 3, e.g. "terminal 301") *and a plurality of second industrial network nodes* (see fig. 3, e.g. "terminal 302-312") *comprising:*

the first industrial network node (fig. 3 e.g. "terminal 301") *and the plurality of second industrial network nodes* (fig. 3, e.g. "terminal 302-312"), *each having a plurality of network ports* (see "a terminal which is used in a local area network and capable of easy changing from an active port to a standby port thereof" recited [0014] lines 1-4) *to a switched network* (fig. 3 see the middle section for "0 transmission line" in block 361

and "1 transmission line" in block 362, each having various "HUB", and see "plurality of hubs forming a simplex basic local area network" recited [0017] line 4);

a plurality of communication paths (fig. 3 depicting a plurality of paths between, e.g. terminal 301 and all other terminals 302-312 and see "it is therefore an object of this invention to provide a local area network path controlling system" recited [0013] lines 1-2) *between respective network ports of the first industrial node and each of the plurality of second industrial network nodes* (fig. 3 depicting two ports each terminal 301-312 and each port having its respective path, and fig. 4 showing detailed structure of a terminal having "LAN. CONT.0 [LAN controller 0] 322" associated with a port and "LAN.CONT.1 323" with another port), *all of the plurality of communication paths comprising the switched network* (fig. 3 noting that said paths connecting to said "HUBs" in "0/1 transmission line" blocks "forming a simplex basic local area network" recited [0017] line 4); *and*

a respective data link protocol layer residing on the first industrial network node and each of the plurality of second industrial network nodes (see "each of the terminals has first and second local area network controllers and assigned with specific internet protocol address" recited [0017] lines 5-7) *wherein the plurality of communication paths are switched base on detection of a fault in connectivity between nodes* (***1:*** refer to fig. 4 showing a "CPU 401" and see "CPU401 to control the whole of the terminal 301. The [a] program makes the CPU 401 serve as an equipment illustrated in fig. 7" recited [0057] lines 2-4. ***2:*** refer to fig. 7 and see "A first failure detecting portion 704 detects a link failure between the active controller 322 and the hub connected to the active controller.

A changing porting 705 changes the active controller from the LAN controller 322 to the LAN controller 323" recited [0058] lines 14-19) *and for determining to which port of the other of the at least two industrial network nodes such communications should be addressed* (see "when the CPU 401 receives the normal reply, it abstracts the source IP address and the source MAC address from the received normal reply" recited [0070] lines 1-3 and "Thus the terminal 301 has the specific IP addresses and the MAC addresses of the other terminals which are put in operation in the destination information table 412. The terminal 301 can communicate with the other terminals by the use of the specific IP addresses and the MAC addresses registered in the destination information table 412" recited [0071] lines 1-3. Also refer to fig. 4 to see said "destination information table 412" as well as a "own terminal information table 413").

Regarding claim 3, *an industrial network node* (see "it is another object of this invention to provide a terminal" recited [0014] lines 1-2) *comprising:*

a plurality of network ports (see "a terminal which is used in a local area network and capable of easy changing from an active port to a standby port thereof" recited [0014] lines 2-4) *connected to a single switched network* (see fig. 3, e.g. "terminal 301" with "LAN cont. 0 322" [port 0] and "LAN cont.1 323" [port 1] both connected to a "plurality of hubs forming a simplex basic local area network" recited [0017] line 4), *wherein a second industrial network node* (fig. 3 see, e.g. "terminal 307") *is also connected to the switched network* (fig. 3 showing "terminal 307" connected to the same network "terminal 301" connected to); *and*

a data link protocol layer transparently usable by higher layers of a protocol stack (see fig. 5 depicting higher layer protocol stacks, e.g. "terminal IP address" "CH IP address" on top of lower data link protocol layer protocol "MAC address (LAN cont.0)" and "MAC address (LAN cont.1)") *to facilitate network communications to the second industrial network node* (see "Each of the terminals is assigned with a specific internet protocol (IP) address. Furthermore, each of the LAN controllers is assigned with a specific media access control (MAC) address. In other words, each terminal has one of the specific IP address and two of the MAC addresses" recited [0051]),*the data link protocol layer being adapted to determine which of the plurality of network ports to use to transmit a communication to the second industrial network node* (***1:*** refer to fig. 4 showing a "CPU 401" and see "CPU401 to control the whole of the terminal 301. The [a] program makes the CPU 401 serve as an equipment illustrated in fig. 7" recited [0057] lines 2-4. ***2:*** refer to fig. 7 and see "A first failure detecting portion 704 detects a link failure between the active controller 322 and the hub connected to the active controller. A changing porting 705 changes the active controller from the LAN controller 322 to the LAN controller 323" recited [0058] lines 14-19), *and to forward communication received on any of the plurality of network ports* (see "when the CPU 401 receives the normal reply, it abstracts the source IP address and the source MAC address from the received normal reply" recited [0070] lines 1-3 and "Thus the terminal 301 has the specific IP addresses and the MAC addresses of the other terminals which are put in operation in the destination information table 412. The terminal 301 can communicate with the other terminals by the use of the specific IP addresses and the MAC addresses registered in

the destination information table 412" recited [0071] lines 1-3. Also refer to fig. 4 to see said "destination information table 412" as well as a "own terminal information table 413").

With respect to dependent claims

Regarding claims 4 and 5, *each industrial network node comprises a communication end-station* (claim 4) and *the communication end-station is selected from the group consisting of a computer, a field module, and a control module* (claim 5) (refer to fig. 3 and see "Each of the **terminals** 301-312 has a main **controller** and two LAN **controllers**." recited [0050] line 1).

Regarding claim 6, *wherein the higher protocol stack layers above the data link layer include an IP layer* (see "each terminal has one of the specific IP address and two of the MAC addresses" recited [0051] line 4-5 on page 5 left col., and see also fig. 5 depicting higher layer protocol stacks, e.g. "terminal IP address" "CH IP address" on top of lower data link protocol layer protocol "MAC address (LAN cont.0)" and "MAC address (LAN cont.1)").

Regarding claim 7, *wherein the higher protocol stack layers above the data link layer include an application layer* (it is well known in the art that networks are constructed for practical uses wherein each and every node is set to perform certain applications or functions for which application layer has to be added on top of all other layers; or otherwise the network will be idling. For teachings of network application layer, see, for example, Fred Halsall, "Computer Networking and the Internet", Fifth Edition, ISBN 0-321-26358-8, p83 "1.5 Protocol stacks" and p84 figure 1.38 (b)

depicting "Application layer protocol(s)" on top of "Network protocol IP" and "Link layer protocol")

Regarding claim 13, *transmitting a broadcast packet from the first node via the alternate port to inform network switches of the MAC address of the alternate port* (see "a first broadcasting portion is for broadcasting an address notification formed on the basis of registrations of the first table onto the simplex basic local area network when starting is carried out" recited [0018] lines 6-9, and further see fig. 5, showing "a format of an own terminal information table" recited [0025] lines 1-2, wherein shown are "MAC address (LAN CONT.0)" [active port] and "MAC address (LAN CONT.1)" [standby port]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims **11**, 12, 14, 16 –18 are rejected under 35 U.S.C. 103(a) as being unpatentable over a first embodiment of Okada (US 2002/0018422) in view of a second embodiment of Okada.

Okada discloses, in a first embodiment, "a local area network (LAN) path control system according a preferred embodiment" ([0047] lines 2-3) comprising the following features:

Regarding claim 11, *a method of providing network communication redundancy between a first and second node* (see "It is still another object of this invention to provide a method of controlling a local area network path which is capable of way changing an active port of a terminal" recited [0015]), *the first and second node* (fig. 3, e.g. "terminal 301" as a *first node* and "terminal 307" as a *second node*) *each having at least two physical network ports* (see "Each of the terminals 301-312 has a main controller and two LAN controllers which have LAN communication ports (not shown) respectively" recited [0050] lines 1-3, and also shown in fig. 3, e.g., "terminal 301" having "main cont. 321" and "LAN cont.0 322" and "LAN cont.1 323"), *wherein for each node, one physical port is a primary port* (see "Either of the first local area network controller or the second local area network controller is put in service and serves as an active controller" recited [0017] lines 12-14) *associate with a primary communications stack and the other physical port is an alternate port* (see "The first specific media access control address is used for an active media access control address when the first local area network controller is the active controller" recited [0017] lines 14-17) *and the other physical port is an alternate port* (refer to fig. 3 and see "the LAN controller 323 is the standby controller when the LAN controller 322 is the active controller" recited [0058], starting first line on p5 left col., lines 33-35 on the right col.), *the method comprising:*

determining at the first node that a communication fault has occurred on that node's primary port (refer to fig. 7, depicting a program that "makes the CPU 401 serve as an equipment" recited [0057] lines 3-4 and "for the CPU 401 to control the while of

the terminal 301" recited [0057] lines 2-3 wherein "CPU 401" is depicted in fig. 4 running "terminal 301", and see "a first failure detecting porting 704 detects a link failure between the active controller 322 [see fig. 4] and the hub connected to the active controller" recited [0058] lines 14-19 on p5 right col.);

forwarding further outgoing network communications associated with the primary communications stack from the alternate port of the first node (refer to fig. 7 and see "a changing portion 705 changes the active controller from the LAN controller 322 to the LAN controller 323 (or the LAN controller 323 to the LAN controller 322) [depending which is the original active controller]" recited [0058] 17-20 on p5 right col.)

Said first embodiment of Okada does not expressly disclose (although it would have been an obvious feature of the first embodiment) the following features:

unbinding the primary communications stack from the primary port at the first node transparently to communications stack layers above a data link layer;

binding the primary communications stack to the alternate port at the first node transparently to communications stack layers above the data link layer.

Okada also discloses, in a second embodiment, "another related LAN path control system" ([0047] lines 2-3) wherein (see fig. 2) "the host computer 210 is connected to both of the communications adapters 230 and 232 while the host computer 220 is connected to the communications adapters 240. Both of the communications adapters 230 and 232 are connected to the communications adapter 240 through a network 250" ([0037] lines 3-8) and "the host compters 210 and 220 are assigned with IP addresses IP=A and IP=B, respectively. The communications adapters

230, 232 and 240 are assigned with MAC addresses MAC=a, MAC=c and MAC=b, respectively" ([0038]) comprising the following features:

unbinding the primary communications stack from the primary port at the first node transparently to communications stack layers above a data link layer;

binding the primary communications stack to the alternate port at the first node transparently to communications stack layers above the data link layer.

(see "when the failure of the communication adapter 230 is detected, the host computer 210 decides to assign the work of the communications adapter 230 to the communications adapter 232. Then the host computer commands the communication adapter 232 to operate" recited [0040])

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system in the first embodiment of Okada by adding the features of the second embodiment of Okada to the first embodiment in order to provide a smoother operation node which minimizes data loss. Note that this feature, to one skilled in the art, should have been in fact implied even in the first embodiment of Okada even though Okada has no express teaching therein.

Regarding dependent claims

Okada's first embodiment discloses the following features:

Regarding claim 12, *wherein each physical network port of the first node has a distinct network and MAC address within the switched network* (see "furthermore, each of the LAN controller is assigned with a specific media access control (MAC) address" recited [0051] line 2 on p4 right col. line 3 on p5 left col. line 1)

Regarding claim 14, *wherein the primary port and alternate port of the first node are connected to the switched network via different network switches* (see "The first local area network controller is directly connected to one of the hubs … The second local area network controller is directly connected to another one of the hubs" recited [0017 lines 8-12).

Regarding claim 16, *wherein the first and second nodes are each of a type selected from the group consisting of a computer, a field module, and a control module* (see "Each of the **terminals** 301-312 has a main **controller** and two LAN **controllers**." recited [0050] line 1).

Regarding claim 17, *wherein the communications stack layers above the data link layer include an IP layer* (see "each terminal has one of the specific IP address and two of the MAC addresses" recited [0051] line 4-5 on page 5 left col., and see also fig. 5 depicting higher layer protocol stacks, e.g. "terminal IP address" "CH IP address" on top of lower data link protocol layer protocol "MAC address (LAN cont.0)" and "MAC address (LAN cont.1)").

Regarding claim 18, *wherein the higher protocol stack layers above the data link layer include an application layer* (it is well known in the art that networks are constructed for practical uses wherein each and every node is set to perform certain applications or functions for which application layer has to be added on top of all other layers; or otherwise the network will be idling. For teachings of network application layer, see, for example, Fred Halsall, "Computer Networking and the Internet", Fifth Edition, ISBN 0-321-26358-8, p83 "1.5 Protocol stacks" and p84 figure 1.38 (b)

depicting "Application layer protocol(s)" on top of "Network protocol IP" and "Link layer protocol").

5. Claims 8, 10, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada in view of Kalkunte et al (US 2002/0010791, Kalkunte hereinafter).

Okada discloses claimed limitations in sections 2 and 4 above. Okada does not disclose the following features:

Regarding claims 8 and 19, *wherein the switched network further comprises at least one IEEE 802.1d compliant bridge.*

Regarding claims 10 and 15, *wherein the plurality of network ports conform to an IEEE 802.3 aggregation standard.*

Kalkunte discloses "trunking and mirroring across stacked gigabit switches" (p1 left col. lines 1-2) comprising the following features:

Regarding claims 8 and 19, *wherein the switched network further comprises at least one IEEE 802.1d compliant bridge* (see "When the packet comes in from the ingress port the decision to accept the frame for learning and forwarding is done based on several ingress rules. These ingress rules are based on the Protocols and Filtering Mechanisms supported in the switch. The protocols which decide these rules are 802.1d (Spanning Tree Protocol), 802.1p and 802.1q" recited [0091] line 1, left col., to line 6, right col.).

Regarding claims 10 and 15, *wherein the plurality of network ports conform to an IEEE 802.3 aggregation standard* (see "Check if the packet is an IP packet (check

for Ethernet V2 type, 802.3, tagged Ethernet V2 and Tagged 802.3 types of Packets)" recited [0210] lines 1-3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system and method of Okada by adding the Ethernet 802.1d and 802.3 features used by Kalkunte to Okada in order to provide faster and more efficient system wherein "bridges [can] typically utilize what is known as the 'spanning tree' algorithm to eliminate potential data loops" as pointed out by Kalkunte ([0008] lines 13-15).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okada in view of Dreyer et al (US 6,098,103, Dreyer hereinafter).

Okada discloses claimed limitations in sections 2 and 4 above. Okada further discloses:

Regarding claim 9, *determining which of the plurality of network ports to use to transmit a communication to the second industrial network node, the data link protocol layer employs an alternate port based on physical link status information received from its ports and end-to-end connectivity status received* (refer to fig. 7 and see "a second failure detecting portion 708 transmits a local area network check signal from a standby controller to the active controller through the simplex based local area network to detect a failure between two hubs 351 and 353" recited [0058] lines 29-33).

Okada does not disclose, regarding claim 9, connectivity status received *from a reliable Logical Link Control (LLC) Type 2 or 3.*

Dreyer discloses “automatic MAC control frame generating apparatus for LAN flow control” (col. 1 lines 1-3) comprising:

Regarding claim 9, connectivity status received *from a reliable Logical Link Control (LLC) Type 2 or 3* (see “MA_DATA.request primitive is generated in accordance with IEEE 802.3x clause 2.3.1.3 by the MAC client entity whenever data shall be transferred to a peer entity or entities. This can be in response to a request from higher protocol layers or from data data generated internally to the MAC client, such as required by Type 2 LLC service” recited col. 6 lines 27-32).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system/method of Okada by adding LLC Type 2 feature of Dreyer to Okada in order to provide an improved flow control mechanism with “enhanced speed, throughput and interoperability over this basic flow control system while maintaining full compatibility with the IEEE standard” as pointed out by Dreyer (col. 7 lines 60-63).

Response to Arguments

7. Applicant's arguments filed on 1/14/2008 have been fully considered but they are not persuasive.

Applicant’s argument is essentially over the claimed feature of "switched network" and Applicant argues that Okada’s network is not a “switched network”.

On page 7 third paragraph of the Remarks, Applicant states “The cited art, and in particular Okada, does not pertain to a switched network. Rather, the networks of Okada appear to be

traditional collision detection networks. … the Okada specification expressly describes these elements as traditional networks, not switched networks."

In the fourth paragraph of the same page, Applicant argues "Okada's description of channels as 'simplex' indicates conclusively that the Okada networks are not switched".

Examiner respectfully disagrees with these arguments based on the following reasons.

A. When claiming "switched network", Applicant provided no details how said claimed "switched network" is uniquely and/or differently switching data paths than the commonly accepted concept of network switching. Therefore, the claimed "switched network" falls into the general context of determining/selecting, under different circumstances, what data paths/links and associated network nodes' ports, regardless how, to transmit data throughout a network, regardless whether the network is simplex or duplex or otherwise.

B. What we are addressing here is a "switched network" instead of individual elements within a network. It means to address the issue if data paths/links can be determined/selected differently at a network level under/for different circumstances. If a network provides such path/link and node port determination/selection under different circumstances, it is providing path/link and port switching, or a "switched network", at a network level regardless whether or not the network comprises primitive elements on an individual basis.

C. Applicant's claimed "switched network" is clearly tied with the above stated general path/link/port determination/selection. For examples, claim 1 sets forth

"determining which of the plurality of communications paths to utilize", claim 2 says "the plurality of communication path are switched based on detection of a fault in connectivity between nodes", claim 3 states "the data link protocol layer being adapted to determine which of the plurality of network ports to use", and claim 11 provides "determining … communications fault has occurred… forwarding further outgoing network communications ... from alternate port", etc.

D. Now, let's review Okada, especially in view of fig. 3 and the network comprising element 361 and 362 carrying data between nodes 301 and 307. It is clear that the hubs 351-358 in the network provide, at a network level, determining/selecting different data paths/links and associated ports under different circumstances, as has been discussed in sections 2 and 4 above. To be more specific, node 301 has LAN controllers (ports) 322 and 323 communicating with node 307's LAN controllers 332 and 333, respectively, via different paths/links, e.g., LAN controller 322 → hubs 351, 355 → LAN controller 332 ("Path 1" hereinafter for the convenience of later discussion) and LAN controller 323 → hubs 353, 354, 358, 357 → LAN controller 333 ("Path 2" hereinafter). Determining, selecting or switching, again at level work level, of the two different paths/links and associated ports is done when either of the "LAN controller-hub failure detection section" (used to detect link/port failures between a node and the hub connected thereto) or the "hub-to-hub failure detecting section" (used to detect failures in hubs and/or the links thereinbetween) detects a fault. For example, if anything is detected wrong with Path 1, for example link breaks down, hub malfunction etc. (largely though not "collision" as Applicant seems to suggest), Okada will determine/select, or

switch to use “Path 2”. All of these are clearly self explanatory by merely examining fig. 3 and Okada in fact provides the details throughout his specification, certain relevant sections of which are applied to the claimed features as discussed above in relevant sections.

Putting all of above together, Okada clearly demonstrated, at a network level, how different paths/links are determined/selected/switched under different circumstances, regardless the use of words such as "simplex network”. In other words, the very general network level switching functionality is clearly disclosed in Okada in the context of determining/selecting different paths/links and associated network nodes' ports.

Lastly, Applicant is reminded that the present Application, in light of its Specification, is essentially about providing network redundancy, especially when network paths/links are detected, by selecting different/alternative paths/links and associated network nodes’ ports. This core issue is expressly reflected in claims 2/11 and implied in claims 1/3. Okada, on the other hand, targets precisely at the same core issue by providing a “LAN path control system capable of easily changing active port of terminal” with a rich body of features, comprising failure detection, multiple ports for each terminal, plurality of hubs in a LAN providing path/link/route selection/switching at a network level, namely a “switched network”, whenever a failure is detected, and all of which comes down to “LAN path control” and “easily changing active port” associated with controlled path.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW LAI whose telephone number is (571)272-9741. The examiner can normally be reached on M-F 7:30-5:00 EST, Off alternative Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on 571-272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Examiner, Art Unit 2616

/Kwang B. Yao/

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